

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-92. (Canceled)

93. (Currently Amended) An isolated nucleic acid encoding a polypeptide comprising a HER-2/Neu fusion protein, the HER-2/Neu fusion protein consisting of a HER-2/neu extracellular domain linked to a HER-2/neu phosphorylation domain and not comprising a HER-2/Neu transmembrane domain, wherein when the extracellular domain is linked to the phosphorylation domain by an amino acid linker, the amino acid linker consists of a non-Her-2/Neu sequence, wherein the HER-2/Neu fusion protein comprises at least 90% identity to SEQ ID NO:6 and wherein the HER-2/Neu fusion protein is capable of producing an immune response against a HER-2/Neu protein in a warm-blooded animal.

94-96. (Cancelled)

97. (Previously Presented) The nucleic acid of claim 93, wherein the HER-2/Neu fusion protein domains are linked via an amino acid linker.

98. (Previously Presented) A viral vector comprising a nucleic acid of claim 93.

99. (Previously Presented) A composition comprising the nucleic acid of claim 93, and a physiologically acceptable carrier or diluent.

100. (Previously Presented) The composition of claim 99, wherein the composition is a vaccine.

101. (Previously Presented) The composition of claim 99, further comprising an immunostimulatory substance.

102. (Previously Presented) The composition of claim 99, wherein the nucleic acid is a DNA molecule.

103. (Currently Amended) An isolated nucleic acid encoding a polypeptide comprising a HER-2/Neu fusion protein, the HER-2/Neu fusion protein consisting of a HER-2/neu extracellular domain linked to a fragment of the HER-2/neu phosphorylation domain and not comprising a HER-2/Neu transmembrane domain, wherein when the extracellular domain is linked to the fragment of the phosphorylation domain by an amino acid linker, the amino acid linker consists of a non-Her-2/Neu sequence, wherein the HER-2/Neu fusion protein comprises at least 90% identity to SEQ ID NO:7 and wherein the protein is capable of producing an immune response against a HER-2/Neu protein in a warm-blooded animal.

104-106. (Cancelled)

107. (Previously Presented) The nucleic acid of claim 103, wherein the HER-2/Neu fusion protein domains are linked via an amino acid linker.

108. (Previously Presented) A viral vector comprising a nucleic acid of claim 103.

109. (Previously Presented) A composition comprising the nucleic acid of claim 103, and a physiologically acceptable carrier or diluent.

110. (Previously Presented) The composition of claim 109, wherein the composition is a vaccine.

111. (Previously Presented) The composition of claim 109, further comprising an immunostimulatory substance.

112. (Previously Presented) The composition of claim 109, wherein the nucleic acid is a DNA molecule.

113. (Previously Presented) A method of making a fusion protein, the method comprising the steps of:

(a) introducing into a cell an expression vector comprising a nucleic acid according to claims 93 or 103;

(b) culturing the transfected cell; and

(c) purifying the expressed fusion protein.

114. (Original) The method of claim 113, wherein the cell is a CHO cell.

115. (Original) The method of claim 113, wherein the cell is cultured in suspension, under serum-free conditions.

116. (Previously Presented) The method of claim 113, wherein the expressed fusion protein is purified by a two-step procedure, the procedure comprising:

(a) anion exchange chromatography; and

(b) hydrophobic chromatography.

117. (Previously Presented) The nucleic acid of claim 93, wherein the HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:3 linked to an amino acid sequence of SEQ ID NO:4.

118. (Previously Presented) The nucleic acid of claim 93, wherein the HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:3 linked to an amino acid sequence of SEQ ID NO:5.

119. (Previously Presented) The nucleic acid of claim 117, wherein the HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:6.

120. (Previously Presented) The nucleic acid of claim 118, wherein the HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:7.

121. (Previously Presented) The nucleic acid of claim 93, wherein the polypeptide is secreted.

122. (Previously Presented) The nucleic acid of claim 103, wherein the HER-2/Neu fusion protein consists of amino acid sequence of SEQ ID NO:3 linked to an amino acid sequence of SEQ ID NO:5.

123. (Previously Presented) The nucleic acid of claim 122, wherein the HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:7.

124. (Previously Presented) The nucleic acid of claim 103, wherein the polypeptide is secreted.

125. (Previously Presented) The composition of claim 109, comprising an oil-in-water emulsion.

126. (Previously Presented) The composition of claim 125, comprising tocopherol.

127. (Previously Presented) The composition of claim 111, wherein the immunostimulatory substance comprises 3D-MPL, QS21, or a combination of 3D-MPL and QS21.

128. (Previously Presented) The composition of claim 111, wherein the immunostimulatory substance comprises 3D-MPL and QS21 in an oil-in-water emulsion.

129. (Previously Presented) The composition of claim 128, comprising tocopherol.

130. (Previously Presented) The composition of claim 109, comprising a CpG-containing oligonucleotide.